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## ☐ 1: Chrna5 cholinergic receptor, nicotinic, alpha polypeptide 5 [*Rattus norvegicus*]

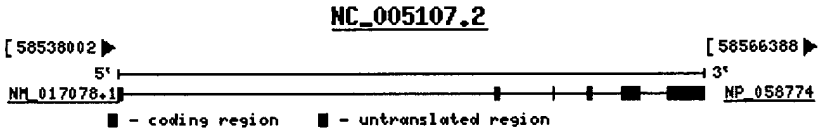
GeneID: 25102 Primary source: RGD:2347 updated 03-Mar-2006

### Summary

**Official Symbol:** Chrna5 **and Name:** cholinergic receptor, nicotinic, alpha polypeptide 5 **provided by** Rat Genome Database
**See related:** RATMAP:39091
**Gene type:** protein coding
**Gene name:** Chrna5
**Gene description:** cholinergic receptor, nicotinic, alpha polypeptide 5
**RefSeq status:** Provisional
**Organism:** *Rattus norvegicus*
**Lineage:** *Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Sciurognathi; Muroidea; Muridae; Murinae; Rattus*
**Summary:** neuronal receptor and ion channel activated by acetylcholine; mediates release of catecholamines into bloodstream [RGD]

### Genomic regions, transcripts, and products

RefSeq below




### Genomic context

See Chrna5 in MapViewer

chromosome: 8; **Location:** 8q24


### Bibliography

Gene References into Function (GeneRIF): **Submit**

PubMed links
**GeneRIFs:**
1. Increased expression of the alpha 5 nAChR subunit following spinal nerve PubMed

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ligation contributes to spinal cAMP response element-binding protein phosphorylation and the maintenance of mechanical allodynia.
2. Similar to other nAChR subunits, there is transient expression of alpha5 mRNA during cortical and hippocampal development. PubMed
3. Increased expression of the alpha 5 nicotinic receptor subunit may contribute to the mechanical hypersensitivity observed following spinal nerve ligation. PubMed
4. Immunocytochemistry revealed most chromaffin cells positive for alpha5 proteins. PubMed

## General gene information

**Markers**
**Chrna5**(e-PCR) (Links: UniSTS:261414)
Alternate names: J05231; RGD:2347

**GeneOntology**
Provided by RGD

| **Function** | **Evidence** |
|---|---|
| GABA-A receptor activity | IEA |
| acetylcholine receptor activity | IEA |
| extracellular ligand-gated ion channel activity | IEA |
| nicotinic acetylcholine-activated cation-selective channel activity | IEA |
| **Process** | |
| ion transport | IEA |
| signal transduction | IEA |
| synaptic transmission | IEA |
| transport | IEA |
| **Component** | |
| integral to membrane | IEA |
| membrane | IEA |
| nicotinic acetylcholine-gated receptor-channel complex | IEA |

**Homology:**
**Human, Mouse**
Map Viewer

## General protein information

**Names:** cholinergic receptor, nicotinic, alpha polypeptide 5
cetylcholine receptor alpha 5; Acetylcholine receptor alpha 5

## NCBI Reference Sequences (RefSeq)

**mRNA Sequence** NM_017078
**Source Sequence** J05231
**Product** NP_058774 cholinergic receptor, nicotinic, alpha polypeptide 5
**Conserved Domains** (2) summary
pfam02932: Neur_chan_memb; Neurotransmitter-gated ion-channel transmembrane region
Location: 242 - 431 Blast Score: 422
pfam02931: Neur_chan_LBD; Neurotransmitter-gated ion-channel ligand binding domain

Location: 32 - 235 Blast Score: 592

## Related Sequences

| Nucleotide | | Protein | Strain |
|---|---|---|---|
| **mRNA** | AY574255 | AAS90351 | Sprague-Dawley |
| **mRNA** | J05231 | AAA74475 | |

| Protein Accession | Links |
|---|---|
| P20420 | GenPept UniProt |

## Additional Links

UniGene Rn.40125

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☐ 1: J05231. Reports Rat neuronal nico...[gi:950093] Links

Comment Features Sequence

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LOCUS       RATNACHRR                2895 bp    mRNA    linear   ROD 21-AUG-1995
DEFINITION  Rat neuronal nicotinic acetylcholine receptor-related protein mRNA,
            complete cds.
ACCESSION   J05231
VERSION     J05231.1  GI:950093
KEYWORDS    .
SOURCE      Rattus norvegicus (Norway rat)
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            Sciurognathi; Muroidea; Muridae; Murinae; Rattus.
REFERENCE   1  (bases 1 to 2895)
  AUTHORS   Boulter,J., O'Shea-Greenfield,A., Duvoisin,R.M., Connolly,J.G.,
            Wada,E., Jensen,A., Gardner,P.D., Ballivet,M., Deneris,E.S.,
            McKinnon,D., Heinemann,S. and Patrick,J.
  TITLE     Alpha 3, alpha 5, and beta 4: three members of the rat neuronal
            nicotinic acetylcholine receptor-related gene family form a gene
            cluster
  JOURNAL   J. Biol. Chem. 265 (8), 4472-4482 (1990)
   PUBMED   1689727
COMMENT     On Aug 21, 1995 this sequence version replaced gi:205617.
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